An oasis of knowledge: the early history of Gateway University Research Park

By: Eric S. Howard and Albert N. Link

Abstract:

In this paper, we chronicle the early history of the development of the Gateway University Research Park at the North Carolina Agricultural and Technical State University and at the University of North Carolina at Greensboro. We document the institutional efforts of faculty, administrators, and public leaders who moved the Gateway idea from seed to harvest to provide guideposts for other institutions to possibly follow that are contemplating establishing a research park. Our summary emphasizes the concept of cooperation not only because it is a cornerstone of the successful development of Gateway, but also because it might be a key element to which others relate.

Keywords: project and program management | knowledge economy | research parks | entrepreneurship | innovation

Article:

Introduction

The number of U.S. university science, research, and technology parks has been growing for more than 60 years. To illustrate this phenomenon, Fig. 1 shows the number of U.S. parks formed between 1951 and 2015, by year. Clearly, there was a surge in park formations beginning in the early 1980.[1] The post-early 1980 surge is also shown in the cumulative number of parks, by year, in Fig. 2; Fig. 2 is based on the 146 parks shown in Fig. 1.[2] While U.S. park growth is unparalleled, the number of countries involved in establishing science, research, and technology parks continues to increase.

---

[1] Link and Scott (2006) associate the increase in the establishment of parks in the early 1980s with the promulgation of technology policies by the U.S. Congress in response to the productivity slowdown in the early and then late 1970s.

[2] Figure 1 was constructed using Web-based information. Whenever we noted a discrepancy about the date a park was founded, we relied on the date given in the most recent source. For example, we found two founding dates for Cornell Business and Technology Park in New York—1951 and 1952. The 1951 date is used in Fig. 1 because it came from a more recent source.
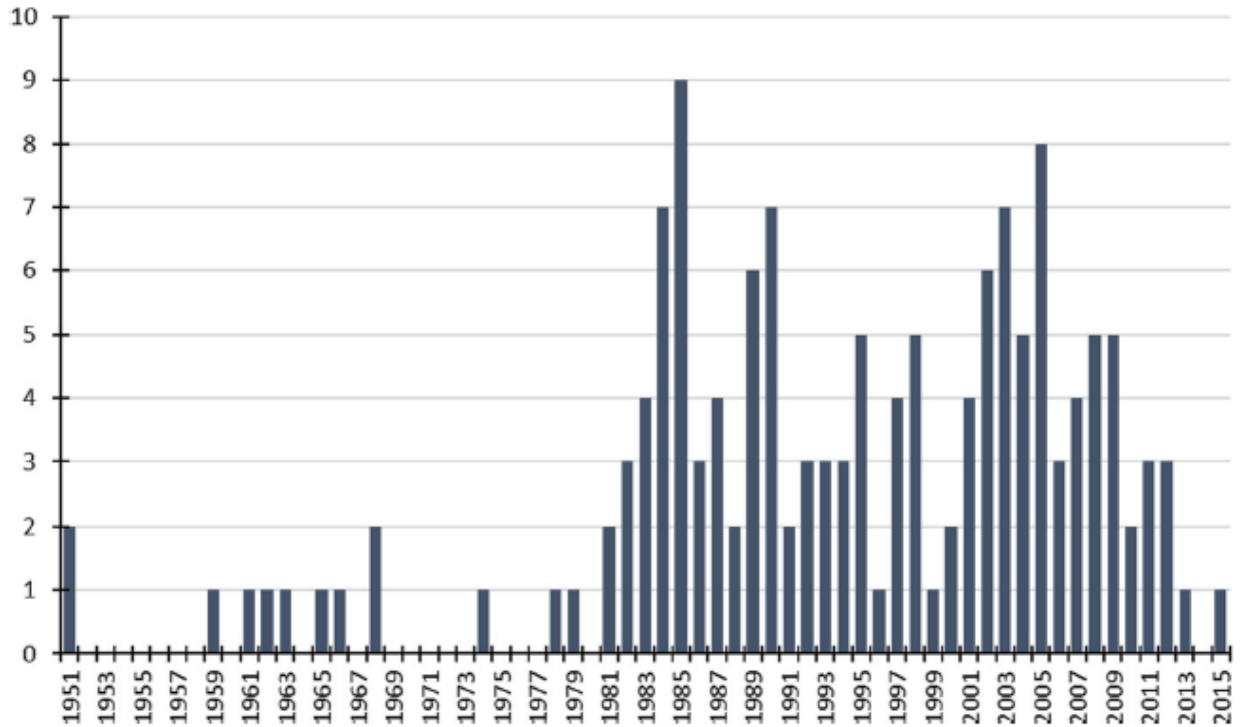
Fig. 1. Number of U.S. university research parks founded between 1951 and 2015, by year
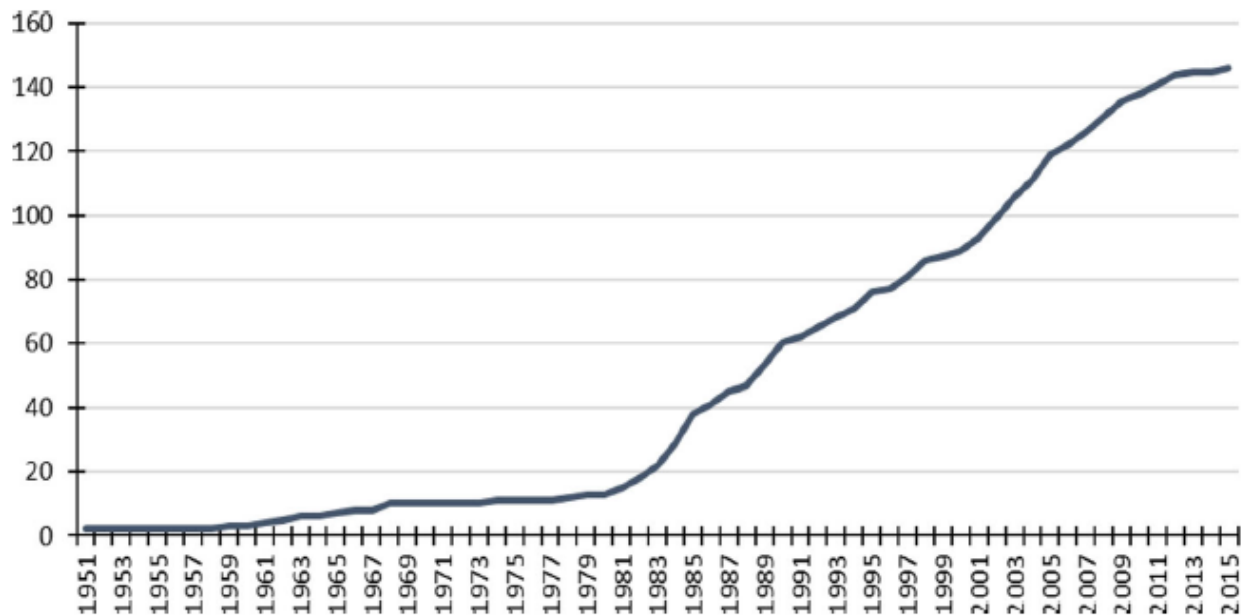
Fig. 2. Cumulative number of U.S. university research parks, 1951 to 2015

The United Nations Organization for Education, Science and Culture (UNESCO) estimates that there are more than 400 parks worldwide, not all of which are associated with a university, as are most parks in the United States. The UNESCO also estimates that the two countries at the top of the international list, in terms of number of parks, are Japan and China, each with more than 100

parks in total (UNESCO 2016a). In fact, the UNESCO has also documented that science park activity is occurring in countries in every continent except Antarctica.

It is reasonable to ask why park growth is occurring worldwide. Building on discussions at the 2008 National Research Council of the U.S. National Academies world conference, *Understanding Research, Science and Technology Parks: Global Best Practices*, the number of parks might be growing worldwide because they are an important infrastructural element of the innovation systems of numerous countries. More simply (NRC 2009, p. 127):

> Science and technology parks are seen increasingly as a means to create dynamic clusters that accelerate economic growth and international competitiveness.

Regarding terminology, Link and Scott (2007) documented, with respect to university-based parks, that *science park* was the term of preference in Europe, while the term of preference in Asia was *technology park*, and *research park* was the more prevalent term used in the United States. Today, it appears to us that the individual terms *science*, *research*, and *technology* as descriptors of parks no longer relate to the activities of tenants in a park along a spectrum of involvement in basic science to commercialization, but rather the terms are simply a means to differentiate the name of one park from another.[3]

Various associations use their own terminology, and to us that terminology reflects more about the amenities offered by park administrators than a description of the activities of park tenants. The UNESCO (2016b) prefers the term *science and technology park*:

> The term "science and technology park" encompasses any kind of high-tech cluster such as: technopolis, science park, science city, cyber park, hi tech (industrial) park, innovation centre, R&D park, university research park, research and technology park, science and technology park, science city, science town, technology park, technology incubator, technology park, technopark, technopole and technology business incubator.

The International Association of Science Parks (IASP 2016) prefers the term science park:

> A science park is an organisation managed by specialised professionals, whose main aim is to increase the wealth of its community by promoting the culture of innovation and the competitiveness of its associated businesses and knowledge-based institutions.

The United Kingdom Science Park Association (UKSPA 2016) also prefers the term science park:

> Science parks nurture, support and provide their tenant companies with access to the very best information, knowledge and expert advice that helps to deliver their tenants future growth and expansion. [Parks] perform a key function acting as an interface between business and centres of knowledge such as universities, government funded laboratories, hospitals, and in some instances corporate laboratories, with the purpose of helping to commercialise ideas that arise from the UK's research base.

---

[3] See also Hobbs et al. (2017), Link and Scott (2006, 2015), and Link and Yang (2017).

Finally, the American Association of University Research Parks (AURP 2016) prefers the term *research park*, and it defines a U.S. university research park as:

> … a property-based venture, which: master plans property designed for research and commercialization; creates partnerships with universities and research institutions; encourages the growth of new companies; translates technology; and drives technology-led economic development.

As Link and Scott (2006) note, the common element in these definitions is that a park is an innovation-related infrastructure through which knowledge is exchanged, and a university is often a catalyst for that symbiotic relationship. Herein, we use the term *research park* not in an effort to parallel the preferences of the AURP, but rather to emphasize the formal name of Gateway University Research Park.

This paper chronicles the early history of the development of the Gateway University Research Park (hereafter simply Gateway) at the North Carolina Agricultural and Technical State University (NCA&T) and at the University of North Carolina at Greensboro (UNCG). Gateway was founded in 2006, and it is one of 11 research parks in North Carolina (see Fig. 3). A brief description of each of these parks is in Appendix Table 4.

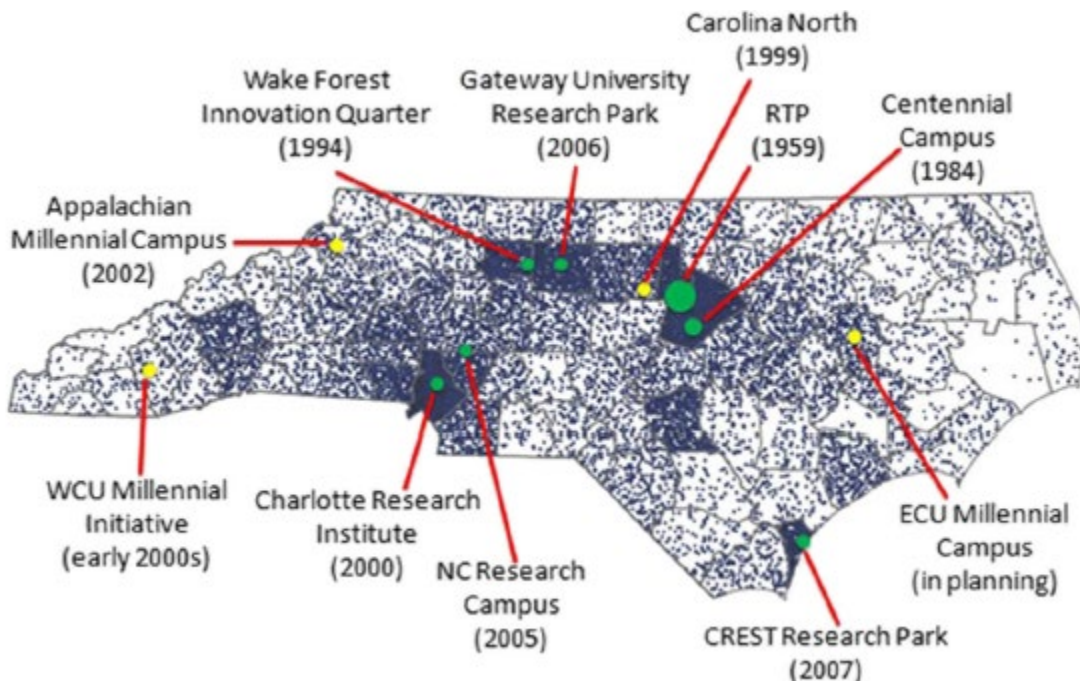**Fig. 3.** Research parks in North Carolina. Source: http://www.nccommerce.com/sti/resources/research-parks, with the permission of the North Carolina Board of Science and Technology. Notes: Blue dots represent population. 1 dot = 500 people. Not all of the parks noted on this map are research parks in the traditional sense of the term as noted in the descriptions in Appendix Table 4

We document the institutional efforts of Greensboro's faculty, administrators, and public leaders who moved the Gateway idea "from seed to harvest" in this paper in order to provide guideposts for other institutions to possibly follow that are contemplating establishing a research park.[4] To elaborate on the prior metaphor, the early history of Gateway documents that the initial "seed" for the park was contained in an initiative toward current regional economic development. That initial seed began to grow into the idea for collaborative research between the NCA&T and the UNCG. Finally, cooperation led to Gateway, the city of Greensboro, the Triad region of North Carolina, and the state of North Carolina reaping the "harvest."[5]

We emphasize the concept of cooperation not only because it is a cornerstone of the successful development of Gateway, but also because it might be a key guidepost element to which others relate. The NCA&T and UNCG are both part of the University of North Carolina (UNC) system, but each has a different history, a different character, a different historical culture, and different academic emphases. The NCA&T is a land-grant institution and an historically black university. Its strengths are in agriculture and engineering, by design. The UNCG was historically a woman's college (until 1964) that excelled in education, the arts, and the sciences. It might be fair to say that for more than a century, the two institutions pursued separate paths toward educational and research excellence. However, due to a conflux of economic events and due to the leadership of forward-looking chancellors and campus leaders, a partnership between the two universities developed in the new millennium that has had, and will likely continue to have, an economic, educational, and cultural impact on Greensboro, and on the surrounding Triad communities that is for the common weal.

The remainder of the paper is outlined as follows. In the "Early Development and the Birth of the Joint Millennial Campus" section, we discuss the early organizational development that led to the birth of the Joint Millennial Campus (defined below). In the "Building the Joint Millennial Campus, 2005–2008" section, we discuss key events associated with the development of the Joint Millennial Campus and Gateway University Research Park. In "The Growth of Gateway University Research Park" section, we reflect on the historical growth of the Gateway in terms of its key tenants and employees, and we encourage future scholars to elaborate on the economic development consequences of this milestone accomplishment known as the Gateway, and to possibly demonstrate that what is past is prologue.

Early Development and the Birth of the Joint Millennial Campus

Background

The Gateway started from a vision, somewhat inspired by the successes of the other research parks in North Carolina (see Fig. 3), although the formal name Gateway would not come into being for nearly a decade after the inception of the idea—October 2006 to be precise. John R. Merrill, the individual who would become the Executive Director of the Gateway, noted the park's humble beginnings in its inaugural annual report (GURP 2007a, p. 4):

---

[4] The phrase "seed to harvest" comes from the title of Link's (2002) book on the early growth of Research Triangle Park. See Fig. 3. See also Link (1995).

[5] The Triad, or Piedmont Triad, is made up of the communities surrounding Greensboro, High Point, and Winston-Salem, North Carolina.

As I sit at my desk reflecting on what has transpired since my arrival in Greensboro on Sunday, December 13, 2004, I am reminded of the first time I was shown this office located in the Mericka Building at what we refer to as our North Campus. The building was every bit the "administration building" that was created in the late 70's for the staff of the Central North Carolina School for the Deaf. Concrete block walls, tile floors and a wooden fascia and soffit riddled with woodpecker holes and other access points for undesirables of all species. Everywhere you looked there were subtle reminders of what had occurred within these walls over the past three decades. My office was a large, mostly empty room with an ancient desk, a chair and a telephone. No computer, no filing cabinets, no files, no photos … in short, no life. As I looked around the room and reflected on my new surroundings, I realized I was looking at a microcosm of the task that lay ahead.

However, the ultimate success of the Gateway, as meager as its beginnings were, should not have been a surprise. Merrill was an experienced park administrator. He came to the Gateway after a successful tenure as the Manager of Financial and Business Operations of the Rensselaer Technology Park in New York.[6]

In the remainder of this section, we summarize activities related to the park's history from 1997 through 2004. This was the period of time during which former NCA&T Chancellor James C. Renick and former UNCG Chancellor Patricia A. Sullivan (1939–2009) pursued a project entitled the Knowledge-Based Economic Development (KBED) initiative. This initiative led to the basic structure of what would eventually become the Gateway. In summary, an initial invitation and contact with the North Carolina Department of Health and Human Services provided the impetus, as well as some of the funding, to create a vision to establish a Joint Millennial Campus; this effort was inspired in large part by the model of North Carolina State University's (NCSU's) Centennial Campus (see Fig. 3). These early activities of the KBED initiative resulted in the creation of a new non-profit organization formed between the NCA&T and the UNCG in 2003 called the Greensboro Center for Innovative Development, the parent of the Gateway.

The Knowledge-Based Economic Development Initiative

The vision for the Gateway was born from the successful development of the Centennial Campus at the North Carolina State University.[7] Originally developed in 1984 from a land grant of 780 state-owned acres to NCSU, the Centennial Campus became a unique and one-of-a-kind collaborative of mixed-use research facilities, combining (NCBS&T 2004, p. 1):

… traditional neighborhoods, villages, and research and development (R&D) clusters with multidisciplinary themes based on NCSU's strengths in research and training programs.

---

[6] See: http://rpihub.org/tech-park-portal/.
[7] See: https://centennial.ncsu.edu/.

The legislation that eventually led to the development of the Centennial Campus was broadened, and in 2000, the General Assembly passed The Millennial Campus Act (State Law 2000-177)[8] outlining the legal requirements of creating a millennial campus at any of the then 16 UNC system campuses. Specifically (NCBS&T 2004, p. 1):

> [T]he General Assembly…passed The Millennial Campus Act (State Law 2000-177) to specify the legal aspects of creating a millennial campus at any of the 16 UNC institutions. This act makes it possible for any UNC institution to develop facilities that encourage university-government-industry collaborations in research and development. By allowing the institutions to build research facilities and occupy them with private-sector partners that derive benefit from a close working relationship with university faculty and students, the Millennial Campus Act extends the educational and economic benefits of these partnerships to regions throughout the state.

In the fall of 1997, an exploratory committee was formed to develop the KBED initiative. The committee consisted of Edward B. Fort, then Chancellor of NCA&T; Chancellor Sullivan of UNCG; John Lauritzen, community member and former Vice President of AT&T and Lucent Technologies; Harold L. Martin, Sr., then Vice Chancellor of Academic Affairs at NCA&T; and *A. Edward* Uprichard, Provost and Vice Chancellor for Academic Affairs at UNCG. The goal of the initiative was (Talking Points 1999, p. 1):

> To combine the research talents of faculty from A&T and UNCG to stimulate and conduct scientific research in selected areas that has the potential for technology transfer. That is research that can lead to patents and the creation of new businesses/companies for the 21st century.

The model for the KBED initiative was grounded in inventing the businesses/industries of tomorrow, and the motivation for the initiative was based on *current* [our added emphasis] regional economic conditions in the Triad (Talking Points 1999, p. 2):

> Guilford County is losing manufacturing jobs to foreign countries and the prospects for creating enough new manufacturing jobs to grow the economic base is not great. At the same time, the Guilford County Triad area is losing its college educated young persons to other areas of North Carolina and states in the southeast because of the lack of professional, scientific, and/or technology related job opportunities.

In light of the KBED initiative goal "to stimulate and conduct scientific research," the exploratory committee was charged with assessing general interest in the initiative and reviewing available logistics. This charge was implemented through a visit to the University of South Florida Research Park,[9] initiated by Provost and Vice Chancellor for Academic Affairs Uprichard, with the result being a concept presentation to the chancellors of the NCA&T and UNCG on November 3, 1998 (Talking Points 1999).

---

[8] See: http://www.ncleg.net/EnactedLegislation/SessionLaws/HTML/1999-2000/SL2000-177.html.
[9] See: https://www.research.usf.edu/rf/research-park.asp.

The November presentation resulted in the NCA&T and the UNCG chancellors' endorsement of the KBED initiative and the expansion of the exploratory committee into a formal Task Force. The Task Force consisted of the original committee members plus Ernestine Psalmonds, Vice Chancellor for Research at the NCA&T; Charles McIntyre, Vice Chancellor for Business and Finance at the NCA&T; Phil Richman, Vice Chancellor for Business Affairs at the UNCG; Ben Rawlins, Special Assistant to the Chancellor for Legal Affairs at the NCA&T; Lucien ("Skip") Capone, III, University Counsel at the UNCG; Bob Shepherd; Richard L. ("Skip") Moore, Vice Chancellor for University Advancement at the UNCG; Robert E. Gatten, Jr., Associate Dean of the College of Arts and Sciences and professor of biology at the UNCG; and Bob Swab, senior manager of Bearing Point, Inc. (Talking Points 1999).

The Task Force was charged with identifying potential areas of expertise for a joint project between the NCA&T and the UNCG to establish a center/institute and a foundation; exploring potential funding sources through endowments, state support, and/or operating budgets at the respective universities; and scheduling additional visits to established research parks, including a return trip to the University of South Florida Research Park as background for a focused discussion of research enterprises (Talking Points 1999).

On March 27, 1999, the Task Force met with Chancellor Fort of the NCA&T and Chancellor Sullivan of the UNCG to discuss the progress of the KBED initiative, and the decision was made to move forward with the initiative. A timeline was set that included meetings with faculty members from the NCA&T and the UNCG to establish an internal support. Faculty-building efforts culminated with a public presentation of the Initiative at a May 19, 1999, press conference (Talking Points 1999). The May press conference served as the formal launch of the KBED initiative, and it included the announcement of a formal Letter of Agreement between the NCA&T and the UNCG signed by Chancellors Fort and Sullivan.[10]

The remainder of 1999 and early 2000 was a period of further development of activities and tasks to advance the KBED initiative. These activities and tasks included a planned joint NCA&T and UNCG faculty retreat scheduled for November 1999; the development of Requests for Proposals/Develop Proposal Review Process and formulation of a request to fund "3–5 Collaborative Projects with great potential for technology transfer" by January or February 2000; and a search (November 1999 through June 2000) for an executive director and one support staff to be located at the NCA&T (Talking Points 1999). However, at some point during this search period, the structure and direction of the KBED initiative changed from an emphasis on current regional economic development to collaborative research for future economic development.

In a letter dated February 2, 2000, from Chancellor Sullivan of the UNCG to then president of the Weaver Foundation of Greensboro, "Skip" Moore, Chancellor Sullivan revealed that a joint decision was reached by the NCA&T and the UNCG to discontinue the KBED initiative. Chancellor Sullivan noted in her letter that the UNCG was (Sullivan 2000, p. 1):

> … poised to begin a research project that we proposed as part of the KBED initiative and that has high potential for technology transfer within the Triad.

---

[10] The Letter of Agreement is not in the Gateway archives. Reference to the letter came from the Talking Points (1999).

Specifically, the University was seeking to partner with the German biotech company MWG Biotech,[11] which had recently located in Winston-Salem, to develop gene array technology. The UNCG was willing to provide a five-year matching grant of $500,000 toward a total project budget of $1 million if the Weaver Foundation was amenable to allowing their already dedicated $500,000 for the now defunct KBED initiative to be applied toward the gene array project (Sullivan 2000).

Initial Collaborations and Partnerships: The Department of Health and Human Services Proposal

In addition to the collaboration with the NCA&T, the UNCG entered into a relationship with the North Carolina Department of Health and Human Services (DHHS) in 2002.[12] As this collaborative project progressed, it was eventually expanded to include the NCA&T. This project was in a sense the "seed" that would later become the foundation for the Greensboro Center for Innovative Development, the future proposal for the Joint Millennial Campus, and eventually the establishment of the Gateway University Research Park.

In a document entitled "Ideas for Collaboration Between UNC-G and DHHS," approximately five departments were identified by the DHHS as potential sources of collaboration for which the UNCG could either provide and share expertise or help facilitate additional meeting and office space for the programs.[13] The initial list of projects included relationships that could be developed between the UNCG and the DHHS. Representative examples of these relationships are summarized in Table 1 (Boyette 2002).[14]

Table 1. Possible collaborative efforts between divisions of the North Carolina Department of Health and Human Services (DHHS) and the UNCG

Division of DHHS	Collaborations with UNCG
Division of child development	• Provide training in early childhood development of county departments of social services • Provide training of statewide staff of local departments of social services, local law enforcement agencies and/or SBI, and the division for investigating child sexual abuse allegations in child day care
Division of public health	• Develop a public school nurse mentor project at the UNCG's School of Nursing • Develop an evaluation plan to establish measurable outcomes for school heal program services
Division of social services	• Establish an effective multi-disciplinary training center for child welfare service workers, child protective service workers, foster care and adoption social workers, child welfare service supervisors, and child welfare service staff
Office of long-term care	• Partner with the UNCG's School of Nursing and Department of Gerontology to establish a model nursing home

Source: Boyette (2002)

---

[11] See: http://www.mwg-biotech.com/.
[12] See: https://www.ncdhhs.gov/.
[13] The hyphen in UNC-G was formally dropped in 1986. Throughout this paper, we use the acronym UNCG unless the acronym UNC-G appears in a quoted passage or in the title of a document.
See: http://uncghistory.blogspot.com/2014/07/rip-unc-g-hyphen-takes-hike.html.
[14] "Ideas for Collaboration Between UNC-G and DHHS" is undated; however, the electronic file of it is dated as 2002 and referenced as Boyette (2002).

The Joint Millennial Campus

A Memorandum of Agreement (MOA) between Chancellor Renick of the NCA&T and Chancellor Sullivan of the UNCG regarding the proposed formation of the Joint Millennial Campus was signed in January 2003 (MOA 2003).[15] The impetus for the partnership had its roots not only in the initial KBED initiative but also in the 2002 proposed collaboration between the UNCG and the DHHS (Boyette 2002). The Millennial Campus Act of 2000 made the collaborative venture between the two universities possible, and the previous partnership in the KBED provided the already-developed relationships to move the project forward.

The new Joint Millennial Campus was proposed to occur in two phases, with each phase involving the development of separate parcels of land. The result of these phases was to be a North Campus (Phase I) and a South Campus (Phase II). Each campus would be the home for different research facilities and tenants. The North Campus was to be developed on the former campus of the Central North Carolina School for the Deaf (CNCSD), which opened in 1975 but had been vacant for some time. The CNCSD was located on approximately 75 acres of wooded land, less than one-half of which were developed. The campus included nine major buildings, comprising approximately 150,000 square feet of space, and it was situated in northeast Guilford County (GCID 2003).

The North Campus would provide general research and training facilities for both universities (MOA 2003, p. 1):

> Phase I: The collaborative development, operation, and joint management of the stand-alone facilities of the Central North Carolina School for the Deaf (CNCSD) as a center for research, development, and training activities for both universities. This campus will ultimately house a large number of programs and projects, enabling the faculty and students involved in them to forge collaborations, share facilities and administrative support, and develop new programs that make optimum use of the space available at the site. These opportunities extend the resources of both universities to the community, the state, and the nation.

Phase II of the Joint Millennial Campus project involved the development of the South Campus, and it was to be located on approximately 75 acres of the NCA&T property known as the NCA&T Farm, situated near the intersection of Interstate 85 and Interstate 40 (GCID 2003). The South Campus was planned to have the following focus (MOA 2003, p. 1):

> Phase II: The collaborative development, operation, and joint management of a portion of the land designated as the North Carolina A&T State University Farm as Phase II of the joint Millennial Campus. The research and growth of this campus shall leverage the established research and development strengths of both universities to benefit the state's and the nation's economic and scientific enterprises.

---

[15] The Memorandum of Agreement is not dated; however, the properties of the electronic file share that it was created in January 2003.

Table 2. Proposed collaborative activities between the NCA&T and the UNCG for the North Campus

Areas for collaboration	Proposed collaborative activities
Economic development	• Through Initiatives for a Competitive Inner City (ICIC), lead efforts to develop market-based business ventures that have a competitive advantage to locate in Greensboro's inner city • Stimulate efforts to improve living standards and employment for current low-income populations in central Greensboro • Develop specific business school programs oriented to better serve the inner-city community • Provide ongoing assessment of competitiveness and formulation of economic strategy for Greensboro's inner city • Provide a national model of growth and development for other cities, drawing on best practices in urban economic development around the United States • Improve minority business development, with a focus on entrepreneurialism
Workforce enhancement	• Develop workforce development certificate programs to prepare Web masters, network and digital visualization specialists, and computer programmers • Develop workforce development certificate programs to prepare Web masters, network and digital visualization specialists, and computer programmers • Develop a training program to help alleviate the shortage of certified child care workers in the State, providing essential knowledge of child development, educational theory, legal issues, and health care of young children • Provide training for representatives from various industries in the field of Customer Service, one of the largest areas of projected labor growth in the decade ahead • Develop training in Technical Communication to help to meet the increasing demand for professionals who can draft technical manuals, edit materials, create online materials for technical use, and proofread documents • Offer a certificate program in Geographic Information Systems to meet the business and industry demand for individuals skilled in site location, transportation logistics, hydrology, security, environmental analysis, and natural resource management • In conjunction with area hospitals, provide accelerated nursing and allied health programs to alleviate the shortage of nursing aides and practical/vocational nurses, as well as the approaching demand for home care specialists, rehabilitation counselors, and physical therapists • Design and offer training for non-degreed teaching aides, which are in high demand by public schools
Service to the Department of Health and Human Services and other state agencies	• Provide pre-service and in-service training for child welfare staff employed in county departments of social services and consolidated human service agencies • Offer training in early childhood development to staff of county departments of social services and the state agency staff working with subsidized child care • Provide training in the NC Protocol for Investigating Child Sexual Abuse Allegations in Child Day Care for staff in agencies involved in these investigations

Areas for collaboration	Proposed collaborative activities
	• Assist in the provision of Spanish language translations for clients and staff in the DHHS Division of Child Development
	• For the DHHS Office of Education Services, provide training and/or program development related to an Add On Licensure Program for HI and coaching/supporting student teachers
	• Assist in the development of programs including ESL for Deaf Students, research-based literacy best practices for Deaf and HH children, assessment and treatment of hearing disorders including tinnitus, working with HI students, and arts enrichment programs for disabled students (art, music, drama, dance, etc.)
	• Conduct assessments of students transitioning from DHHS Early Intervention Programs into public schools
	• Launch follow-up studies on students who graduate or complete their education at one of the DHHS residential schools to determine success rates in terms of employment or post graduate education and training
	• Working with DHHS and possibly area nursing homes, establish a model nursing home that utilizes best practices and can serve as a clinical site for nursing students
	• Establish programs that provide an interface between the mental health system and the juvenile justice system and systems of care for children with emotional disturbances
	• Working in concert with the State Department of Public Instruction, establish programs aimed at closing the achievement gap between student populations
	• Develop enhanced vocational rehabilitation programs
Technology & distance learning	• Develop a distance learning Birth-Kindergarten licensure
	• program for the DHHS Office of Education Services
	• Develop distance learning training modules and courses for professionals in a wide range of fields (teachers, administrators, social service providers, middle-level management in business and industry, etc.)
	• Provide technical assistance to start-up companies and entrepreneurs seeking to develop new technologies
	• Provide professional development in computer skills assessment and enhancement, including the application of distance learning technologies
	• Provide technical assistance to public schools and social services agencies in designing information systems (hardware/software) to meet their needs
	• Development of technological applications related to agriculture and other industries that could benefit from enhanced technology
	• Establishment of an information system that would serve as a clearinghouse to broker the resources of A&T and UNCG faculty to meet the needs of individuals, schools, social agencies, and business and industry

On February 21, 2003, a proposal for the use of the CNCSD by the NCA&T and the UNCG was sent by Chancellor Renick of the NCA&T and Chancellor Sullivan of the UNCG to Gwynn Swinson, Cabinet Secretary at the North Carolina Department of Administration (Renick and Sullivan 2003a, b). The proposal detailed the following four areas of collaboration to take place on the CNCSD campus: economic development, workforce enhancement, service to DHHS and other state agencies, and technology and distance learning. Specifics about the proposed collaborative activities in the four areas suggested by Chancellors Renick and Sullivan (2003a) in their letter that covered the proposal are outlined in Table 2. Neither the cover letter nor the proposal mentioned either the North Campus or the Joint Millennial Campus by name. As of

February 2003, the state had not yet approved the transfer of the building and land to the universities. However, a draft document titled "The First Decade of Gateway University Research Park: An Historical Narrative" acknowledged that this did occur later in 2003 (First Decade 2003, p. 2)[16]:

> The campus was transferred jointly to both universities by the NC General Assembly in 2003, with future US Senator, then NC State Senator from Greensboro, Kay Hagan playing an instrumental role.

The Genesis of the Greensboro Center for Innovative Development

A formal concept paper for the Joint Millennial Campus was finalized in September 2003. This concept paper is noteworthy because it documents a name for the Joint Millennial Campus, namely the Greensboro Center for Innovative Development (GCID).

The concept paper sets forth a vision of the results from a research collaboration between the two universities (GCID 2003, pp. 1–2):

> Combining the research talents of both faculties will foster scientific research and teaching with the potential for technology transfer and patents, for creation of new revenue-generating companies, and for services to local and state agencies. Economic development projects will typically be characterized by efforts to *improve the businesses/industries of today while helping to invent the businesses/industries of tomorrow* [emphasis added]. Building on the complementary strengths of both universities, initiatives born and nurtured at the Millennial Campus will help strengthen the area's economy, improve community services, and enrich the quality of life.

The concept paper went beyond the materials originally sent to Cabinet Secretary Swinson earlier in that year; it highlighted the different research emphases between the two campuses. The North Campus was to become the home of a new collaborative venture between the two universities, to be called the "Institute for Training, Research, and Development," that would (GCID 2003, p. 2):

> …initially target the needs of school systems, business and industry, and various health/social services agencies to stimulate economic growth and vitality throughout the region. They will include a broad range of efforts related to economic development, technology-focused professional education and training, and program evaluation/assessment. Hosted activities would include conferences and other forms of continuing professional development

---

[16] The wording from the NC General Assembly was: "TRANSFER OF LAND FOR THE MILLENNIUM CAMPUSES OF UNC-GREENSBORO AND NC A&T STATE UNIVERSITY, SECTION 6.20. Notwithstanding G.S. 143-341(4)g. or any other provision of law, the property currently allocated to the Department of Administration and previously allocated to the Department of Health and Human Services for the Central School for the Deaf at Greensboro is hereby reallocated to the Board of Governors of The University of North Carolina. This property shall be used for the establishment of Millennium Campuses of the University of North Carolina at Greensboro and North Carolina Agricultural and Technical State University."
See: http://www.ncga.state.nc.us/EnactedLegislation/SessionLaws/HTML/2003-2004/SL2003-284.html.

In contrast, the South Campus was to focus on the biological and life sciences in order to (Boyette (2003), pp. 3–4):

> … develop state-of-the-art science research park facilities for cutting-edge work in the life and physical sciences, engineering, technology and other applied science areas.

More specifically, the major areas of research emphasis at South Campus were to include (GCID 2003, p. 4):

- Life Sciences (genetic manipulation, cellular and developmental biology, pharmacology, physiology)
- Environmental Sciences (water quality, aquatic ecology, waste remediation, chemical hazards, pollution reduction, environmental restoration, geographic information systems, land use)
- Electronics and Human Factors (electrical and software engineering, internet and computer security, data visualization and simulation, high-performance computing, artificial intelligence, neural networks)
- Food and Nutrition (disease prevention, diet analyses, bone biology, mineral/vitamin absorption)
- Materials Science and Engineering (polymer and composites science, surface modifications)

The 2003 concept paper also provided in its structure and governance section additional and unique information about the Joint Millennial Campus. The governance proposal was for a newly created non-profit corporation that would hold title to both campuses, would operate largely from non-state funding, and would (GCID 2003, p. 5):

> … operate exclusively for scientific and educational purposes for the benefit of A&T and UNCG.

Early on, the GCID had contracted with consultants to guide the development process for the two campuses (BJAC 2006, pp. 1–2):

> As part of the planning process for the South Campus, GCID commissioned a financial and fiscal impact analysis for the site … As a result of this and other studies, GCID had determined that South Campus will distinguish itself from other research parks by using academic scholarship, intellectual curiosity and applied problem-solving to attract industry and improve the human condition … The long-term success of the South Campus depends on its ability to foster connections with—and between—NCA&T and UNCG's campuses.

The culmination of this planning was the commissioned George, Henry, George Partners report. The report outlined a strategy for the GCID, and many of the elements to implement the strategy were already in place thanks to the forward-looking leadership of the GCID (GHGP 2006, p. 8):

Achieving the full research park potential will require the effective development and marketing strategy described in the subsequent phases of this report. That strategy will benefit much from: 1) aggressive efforts to increase research funding at the two institutions; 2) to define and act on an effective regional technology marketing program, with particular emphasis on coordinated focusing of total resources on regional competitiveness; 3) by guiding marketing carefully by national and regional economic change and emerging growth sectors; and 4) by continuing and accelerating efforts to build the highest quality workforce through supplemental training for those already possessing manufacturing skills as well as increased resources for more traditional educational programs.

Both the NCA&T's and the UNCG's Board of Trustees had already approved the proposal of the Joint Millennial Campus for submission to the Board of Governors. Additionally, both Boards had approved Articles of Incorporation and by-laws for the Joint Millennial Campus, so the two next steps for moving forward were to file papers for incorporation and to begin the search for an Executive Director (GCID 2003).

The Articles of Incorporation for the Greensboro Center for Innovative Development were signed on August 6, 2003, by NCA&T Chancellor Renick and the Vice Chancellor for Academic Affairs, Carolyn W. Meyers, as well as by UNCG Chancellor Sullivan and the Provost and Vice Chancellor for Academic Affairs, A. Edward Uprichard. The articles were filed with the State of North Carolina on October 30, 2003 (Articles 2003). The Internal Revenue Service granted GCID's non-profit 501 (c) (3) status on December 8, 2004 (IRS 2004), and thus, the Joint Millennial Campus was officially born.

Building the Joint Millennial Campus, 2005–2008

Acquiring Leadership, Establishing Funding, and Formalizing Governance

In December 2004, Chancellor Renick of the NCA&T and Chancellor Sullivan of the UNCG hired, at the recommendation of a GCID search committee, John Merrill as Executive Director (GCID 2003) of the Millennial Campus. Merrill received his Masters of Business Administration from the Rensselaer Polytechnic Institute in 2003 while simultaneously serving as Manager of Financial and Business Operations of Rensselaer Technology Park located in Troy, New York, a position he held for nearly eleven years. Chancellor Renick described Merrill's hiring as a benefit not only to the project but for the larger community as well (Withers 2004):

> Now we have someone who wakes up every morning and goes to sleep at night thinking about one thing: the millennium campus and the center … This is a big day for both of our institutions [NCA&T and UNCG] … This is big a day for Greensboro and beyond.

Chancellor Sullivan expressed similar optimism. Merrill expressed his enthusiasm for this opportunity and looked forward to a more clearly defined role for the GCID (Withers 2004):

This is an opportunity for me to put my fingerprints on something new from the ground up…Now it's time for me to take what they've done up to this point and put some meat on it.

Merrill's duties included oversight of GCID's development, collaboration with the community members, and work with researchers from the two universities regarding identifying potential business opportunities (Withers 2004).

The Joint Millennial Campus, now an official 501 (c) (3) organization, had a budget with two components: a matching portion from both the NCA&T and the UNCG, and a portion allocated by the North Carolina General Assembly for the specific development of the two campuses. The North Carolina General Assembly had also allocated $4 M for renovations to the North Campus and $10 M for starting work at the South Campus (Withers 2004; GCID 2005a).

The Management Services and Development Agreement (MSDA) was signed on July 1, 2005, to formalize the relationship among the NCA&T, UNCG, and GCID. The MSDA formally established the relationships between the three primary organizations, the role and mission of the GCID, the delineation of the use of funds and property under the GCID's control, and governance of the GCID (MSDA 2005). More specifically, the MSDA articulated two primary purposes for the Joint Millennial Campus (JMC) (MSDA 2005, p. 1):

> Whereas the Universities and GCID desire to work cooperatively towards development of JMC's full potential to enhance scholarly research, increase the range of educational experiences for students and to foster economic development in the region…GCID is a separately incorporated nonprofit organization created (i) to support the educational and research missions of the Universities, including without limitation, enhancing scholarly research and increasing the range of educational experiences for faculty and students and (ii) to foster economic development and entrepreneurial activities in the region, by engaging in such activities as purchasing, developing or managing real estate for expansion, research facilities or other capital improvements desired by the Universities at the JMC.

Signatories to the MSDA included NCA&T Chancellor Renick, UNCG Chancellor Sullivan, GCID Executive Director Merrill, and the chairmen of the Board of Trustees for NCA&T and UNCG. The UNCG Board of Trustees approved the MSDA on September 1, 2005, and the NCA&T Board of Trustees followed on September 21, 2005.

As a result of the MSDA, the GCID was to be considered an independent contractor of the universities and not an agent or employee of the universities in executing the main purposes of the Joint Millennial Campus, with the Board of Directors managing the operations of GCID. The universities' chancellors were to be in consultation with GCID annually, and the GCID Board of Directors would be responsible for developing performance measures as benchmark indicators meeting the objectives of the universities. The development of performance measures not only laid the foundation for evaluating the Joint Millennial Campus' progress but also initiated the regular submission of annual reports to the universities to begin on or around July 15, 2006.[17]

---

[17] The first annual report would not be completed and submitted formally until 2007. See GURP (2007a).

On August 19, 2005, the first set of GCID by-laws were approved establishing the Board Directors, Board members, duties and terms (originally three years) of the Board members, processes for contracts and grants, as well as the role of Executive Director and other officers serving the GCID (GCID 2005b). The original Board was composed of Carolyn W. Meyers, former Provost and Vice Chancellor for Academic Affairs at the NCA&T; Chancellor Renick of the NCA&T; Chancellor Sullivan of the UNCG; and Provost and Vice-Chancellor of Academic Affairs, A. Edward Uprichard of the UNCG. The GCID Executive Director Merrill was to serve as a nonvoting member. In 2006, the Board would expand to 16 members (GCID 2006). Those members are listed in Table 3.

Table 3. Greensboro Center for Innovative Development Board of Directors, 2006

Board member/director	Title/affiliation
Dr. Stanley Battle	Chancellor, the North Carolina A&T State University
Dr. Patricia Sullivan	Chancellor, The University of North Carolina at Greensboro
Dr. Janice Brewington	Provost, the North Carolina A&T State University
Dr. A. Edward Uprichard	Provost and Vice Chancellor for Academic Affairs, the University of North Carolina at Greensboro
Mr. Mac Sims	President, East Market Street Development Corporation
Mr. Edward Kitchen	Vice President, the Joseph M. Bryan Foundation
Mr. Ralph Shelton	President/CEO
Mr. Thomas Sloan	Former Chairman
Mr. Lee McAllister	President/CEO, Weaver Investment Company
Ms. Denny Kelly	President/Principal, Bouvier Kelly
Mr. Gwyn F. Riddick	Director, Piedmont Triad Office, North Carolina Biotechnology Center
Dr. Lily Kelly-Radford	Executive Vice President, Center for Creative Leadership
Dr. Gerald Truesdale	President/Surgeon, Greensboro Plastic Surgical Associates
Mr. Dennis Stearns	Certified Financial Planner, Stearns Financial Services Group
Ms. Barbara Demarest	Senior Enterprise Associate, Center for Creative Leadership
Mr. John R. Merrill	Executive Director, GCID/Gateway University Research Park (nonvoting)

Source: GCID (2006)

Since 2003, the Joint Millennial Campus had been operating under the name the Greensboro Center for Innovative Development (GCID). At the August 25, 2006, Board meeting, Executive Director Merrill proposed an alternative name as well as a new logo to accompany it: Gateway Research Park. Merrill suggested that the proposed name change would more accurately reflect the purpose of the entity (GCID 2006, p. 2):

> John introduced a new design logo and a proposed new name for GCID. He suggested Gateway Research Park replace GCID to better reflect the purpose of the entity.

However, a discussion ensued where several Board members raised concerns regarding the possible risk of confusing the GCID operating as the Gateway with the Gateway Education Center,[18] an alternative school in Greensboro that specializes in meeting the needs of exceptional children, especially those with severe cognitive, mental, and/or medical disabilities.

---

[18] See: http://gateway.gcsnc.com/pages/Gateway_Education_Center.

At the October 19, 2006, Board meeting, the issue of GCID name change was revisited. Executive Director Merrill once again led the discussion and explained that during the intervening weeks as many as 150 different options were considered. One Board member brought up Merrill's original proposal, the Gateway Research Park, which moved the discussion back in that direction. The Board felt it was important (GCID 2006, p. 1):

> …to connect the name to both the region and to the universities and that the term Gateway recognized the history of Greensboro without being too "Greensboro-centric."

A recommendation was made to consider the name Gateway University Research Park. The motion was seconded and passed unanimously. On October 20, 2006, a formal submission was made to the Secretary of State of North Carolina and the corporate name was changed from Greensboro Center for Innovative Development, Inc. to Gateway University Research Park, Inc. (Name Change 2006). A coordinated formal press event was held on December 12, 2006, to announce the new Gateway name, unveil the park's logo, announce the park's website, present to the public the Master Plan for South Campus, and introduce new Board members (GURP 2007a).

The final component of Gateway governance that was necessary for continued growth was to put the park real estates in the name of Gateway. This was accomplished in early 2007 through the negotiation of the ground lease agreement between the State of North Carolina and Gateway University Research Park, Inc. (GURP 2007b). The ground lease agreement effectively placed control of the North Campus and the South Campus with Gateway, in consultation with the NCA&T and the UNCG. With the transfer of land, and with a healthy financial condition, the Gateway University Research Park was positioned for growth.

Breaking Ground on the South Campus

The location of the South Campus was to be situated on approximately 75 acres of what was originally a portion of the NCA&T University Farm. Because the land was originally a part of the NCA&T University Farm, it was zoned for agriculture, so the Gateway staff worked with its project engineer "to guide the rezoning of approximately 75 acres of the South Campus in preparation for the construction of Research Facility One" (GURP 2007b, p. 15). The rezoning was approved in May 2007, but it had some unintended consequences, in particular there was resistance to the rezoning from the College Forest neighborhood adjacent to the South Campus.

Although the plans for the South Campus had been highly publicized for several years, the Gateway University Research Park had not formally approached the College Forest residential neighborhood to discuss the development plans for the project. As a result, the Gateway chose to delay the rezoning for 60 days in order to more closely work with the neighborhood to bring them up-to-speed on development plans. Although the process was stressed at times, the Gateway Board members and university officials diligently worked to reach a mutual understanding with all concerned.

On March 14, 2007, the Gateway and representatives from the College Forest Neighborhood Association (CFNA) signed a memorandum of understanding which created a nine-member

Advisory Committee and enumerated several other items of agreement including the creation of a forum for discussion between the Gateway and the community regarding further project developments (MOU 2007). Specifically, the MOU outlined that the Gateway would be responsible for creating a "buffer wall" between the South Campus and the College Forest subdivision; that Gateway would manage pest control; that Gateway would consider the safety concerns of the community as a result of rezoning; that Gateway would communicate in writing any concerns raised by the College Forest community to the Gateway Board; that Gateway would agree not to develop any residential property on South Campus, and that Gateway officials would continue to meet Bon a periodic basis^ with the CFNA (MOU 2007). As a result of the signing of the MOU between the CFNA and Gateway, the situation was resolved and the continued development of South Campus moved forward.

Realization of the promise of the South Campus began its first steps toward becoming a reality on May 16, 2007, with the formal groundbreaking ceremony. The ceremony was attended by approximately 250 people as well as being covered by the local media (GURP 2007a, b, p. 11). In the words of the Gateway University Research Park (GURP) Executive Director John Merrill[19]:

> Breaking ground for this facility is a monumental event that reflects the future of this region ... Gateway University Research Park is making history through its joint collaborative efforts with two dynamic universities within a geographic region that's poised for phenomenal growth in research.

The ceremony included remarks by former UNC system President Erskine Bowles; former UNCG Chancellor Sullivan; former NCA&T Chancellor Lloyd Hackley; former Chief Arlen Lancaster from the U.S. Department of Agriculture; and J. Edward Kitchen, then chairman of the Gateway Board.[20] Chancellor Sullivan expressed her longtime commitment to the project and excitement over seeing the next stage of the project beginning to become a reality[21]:

> This is the realization of a dream that I've had for at least the last five years … I remember when we started talking about the future of Greensboro and Guilford County and people came up with all kinds of ideas on what we needed—at the top of my list was a bustling, thriving, intellectually driven research park … It's taken us a while to get there, but we've done it right. We set the stage today for the beginning of an innovating, exciting series of projects and programs that will tap the talents of faculty staff and students at North Carolina A&T and UNCG. Their energy and their creativity will serve as a magnet for others that want to work with them and want to tap their expertise to be part of a thriving enterprise.

President Bowles remarked that his expectation was for the Joint Millennial Campus not only to lead the way in research innovation but also to be a source of economic growth for the Triad.[22]

---

[19] See: https://newsandfeatures.uncg.edu/research-park-breaks-ground-for-new-building/.
[20] See: https://newsandfeatures.uncg.edu/research-park-breaks-ground-for-new-building/.
[21] See: https://newsandfeatures.uncg.edu/research-park-breaks-ground-for-new-building/.
[22] See: https://newsandfeatures.uncg.edu/research-park-breaks-ground-for-new-building/.

The Greensboro of the future is here. It will be spurred on by the combined brain power and state of the art facilities that will soon dominate this park … With these two universities, I believe that we have an obligation to lead the Triad into the 21st century … The world is seeing explosive growth today in commercialization of nanotechnology, and we will have all of the assets right here in Guilford County at the Gateway University Research Park to participate in that explosion. I fully expect to see new technologies, new patents and new companies come forward in this park, and that will create a vital new economy right here in the triad.

Inauguration of the North Campus

The inauguration of the North Campus was held in July 2007. The newly renovated Dixon Building houses the Southeastern Regional Vision for Education (SERVE) Center,[23] the centerpiece of the North Campus ((GURP) 2007a, b). The SERVE Center is an educational research and technical assistance provider that had been operating at various locations at the UNCG since its inception in 1990 and had generated, to that point in the summer of 2007, approximately $175 million in sponsored research and program evaluation awards. The ceremony included remarks by then Chancellor Sullivan, then NCA&T Chancellor Stanley Battle, State Superintendent June St. Clair Atkinson, UNCG Provost Emeritus Edward Uprichard, and Gateway Executive Director John Merrill.[24]

While several other projects were already beginning to occupy or utilize the already existing office space at the North Campus in support of their various programs, the SERVE marked the beginning of the realization of the initial aims of the Joint Millennial Campus.

Broadening the Impact of the Joint Millennial Campus: The Joint School of Nanoscience and Nanoengineering (JSNN)

The creation of the Joint School of Nanoscience and Nanoengineering (JSNN) of the North Carolina A&T State University and the University of North Carolina at Greensboro, the brainchild of former Provost and Vice Chancellor for Academic Affairs at UNCG, A. Edward Uprichard, exemplifies the vision and continuing development of the Joint Millennial Campus.[25] Dr. James G. Ryan is the current and the founding Dean of the JSNN. Dean Ryan came to the JSNN in July 2008, having served as Associate Vice President of Technology and Professor of Nanoscience in the College of Nanoscale Science and Engineering (CSNE) of the University at Albany from 2005 to 2008.

The JSNN was envisioned as (GURP 2009, p. 7):

… a unique collaborative model between North Carolina A&T State University and the University of North Carolina at Greensboro to create significant breakthroughs in nanotechnology innovation and bring those innovations to market. This flagship endeavor

---

[23] See: http://www.serve.org/.
[24] See: https://newsandfeatures.uncg.edu/research-park-dedicates-serve-building/.
[25] See: http://jsnn.ncat.uncg.edu/vision-and-mission/.

is the nation's only joint school of nanoscience and nanoengineering whose faculty, students and business partners will forge the products of the future.

The groundbreaking ceremony for the JSNN was on November 9, 2009. As Gateway Executive Director John Merrill noted before the ceremony[26]:

> The nanoscience and nanoengineering industries are a direct pathway to the future of major technological breakthroughs in the areas of nanobiology, nanometrology, nanocomposite materials and bioelectronics. Gateway University Research Park is once again making history by positioning the Triad region for growth in these arenas.

Over 300 people attended the groundbreaking ceremony, and it was highlighted by remarks by former UNC President Erskine Bowles; Ms. Hannah Gage, former Chair of the UNC Board of Governors; Representative Joe Hackney, former Speaker of the North Carolina House of Representatives; and NCA&T Chancellor Harold L. Martin, Sr.; and former UNCG Chancellor Linda Brady (GURP 2010, p. 2). Ms. Gage noted in her remarks that[27]:

> Our ability to navigate the current economic challenges and to continue to excel in the future will not be based on one individual's success, one project's success, or the success of one campus … It will be our collective efforts and our spirit of collaboration that usher us into an era of achievement for higher education.

This sense of "collective effort" and "spirit of collaboration" not only marked the development of JSNN but also would become an example of how the Gateway sought to foster their mission of promoting research and economic development.

Construction on the new JSNN building at the South Campus began in December 2009 and was funded primarily through a State of North Carolina grant of $64.3 million toward the JSNN program (GURP 2009, p. 3). HDR, Inc.[28] of Alexandria, Virginia had been selected as the architectural and engineering firm for the JSNN, "due to its extensive resume of similar nano-related projects" (GURP 2009, p. 7). Construction of the building was a joint venture between Greensboro-based Samet Corporation,[29] Barton Malow[30] of Southfield, Michigan, and SRS Inc.[31] of Hendersonville, Tennessee (GURP 2009, p. 7). Final construction was completed by November 2011 (GURP 2012, p. 14):

> The new two-story, 105,000 square foot facility features extensive labs, a 7,000 SF cleanroom, a 3-D visualization suite, a telepresence suite, and a large suite of high-tech tools including a Carl Zeiss SMT Orion Helium Ion microscope, which is the only one of its kind in the Southeastern U.S.

---

[26] See: https://newsandfeatures.uncg.edu/nov-9-groundbreaking-scheduled-for-joint-school-of-nanoscience-nanoengineering/.
[27] See: https://newsandfeatures.uncg.edu/universities-break-ground-for-jsnn-research-facility/.
[28] See: http://www.hdrinc.com/.
[29] See: http://www.sametcorp.com/.
[30] See: http://www.bartonmalow.com/.
[31] See: http://www.srsincorp.com/.

The grand opening ceremony for the JSNN building was held on December 7, 2011, and it included remarks by former North Carolina Governor Bev Perdue, Senator Phil Berger, former Representative Harold Brubaker, former UNC System President Tom Ross, former UNCG Chancellor Linda Brady, NCA&T Chancellor Harold Martin, and JSNN Founding Dean James Ryan.[32]

The Growth of the Gateway University Research Park

We have chronicled the early history of the Gateway University Research Park in this paper from "seed to harvest," that is, from the inception of the initial idea through the initial growth of the park. As we previously suggested, the initial "seed" for the Gateway was the collaborative vision of the NCA&T's former Chancellor Renick and the UNCG's former Chancellor Sullivan, supported by many devoted individuals from the two universities and from throughout the region. That collaborative vision and continued cooperation among all involved has resulted in the "harvest" that Greensboro, the Triad region of North Carolina, and the state of North Carolina are beginning to reap.

As shown in Fig. 4, the number of tenants in the park has increased since 2008; in fact, the number of tenants has more than doubled since 2008.[33]

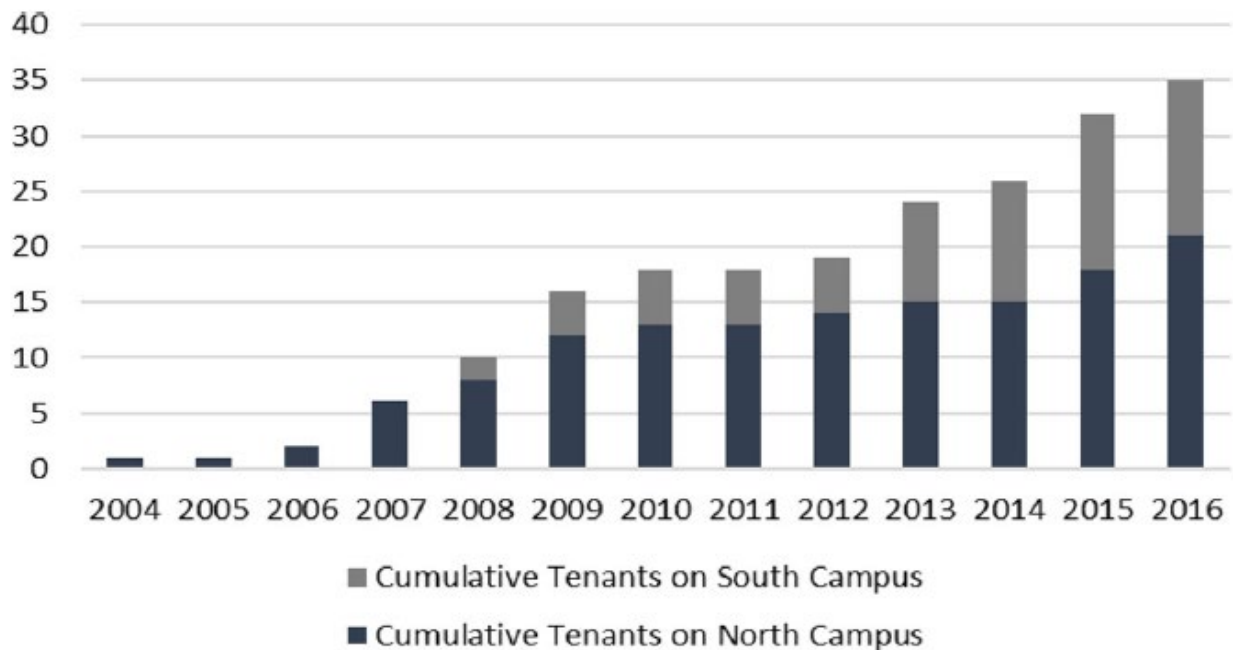What has been in the past may in fact be a prologue to the future of the park.

Fig. 4. Tenant growth at the Gateway at the Gateway University Research Park. Source: Gateway University Research Park

---

[32] See: https://newsandfeatures.uncg.edu/gov-perdue-to-speak-at-jsnn-facility-opening-dec-7/.
[33] In 2017, there are 315 employees in the park.

Appendix

Table 4. Description of North Carolina's research parks

Park	Year founded	Description
Research Triangle Park	1959	"We imagine what the world could be and then roll up our sleeves and make it so. This is where ideas are nurtured; where we're free to look out over the horizon and dream big; where asking, "What if …" is the norm." http://www.rtp.org/about-us/
Centennial Campus	1984	"[The] mission is to become the premier destination for innovative collaboration between business, research, and education." https://centennial.ncsu.edu/
Wake Forest Innovation Quarter	1994	"The mission of Wake Forest Innovation Quarter is to drive economic growth and build vibrant community. We do this by: • Facilitating innovation through real estate development, tenant growth and building a vibrant community • Engaging with tenants and residents to meet their shared needs, including facilities, services, special activities, programs, events and space activation • Creating programs for tenants and residents for the exchange of ideas and knowledge • Partnering with local, regional and national organizations to foster entrepreneurship and the start-up community and help attract funding to support growth and sustainability." http://www.innovationquarter.com/about/vision/
Carolina North	1994	"Carolina North is a research and mixed-use academic campus planned for 250 acres two miles north of the main campus of UNC-Chapel Hill. As a public research university helping to transform the state's economy, Carolina must compete with national peers for the talent and resources that drive innovation. Today, that competition demands a new kind of setting—one that enables public-private partnerships, public engagement and flexible new spaces for research and education. Carolina North will be a world-class magnet to attract the best and brightest to North Carolina, one that will create tremendous economic benefit for the state. This campus will promote a synergy among research, business, science, law and technology that will in turn produce new ideas, products and jobs. This research-driven entrepreneurship will take place in a highly green environment, one specifically designed to be a model of sustainability and to take advantage of the latest technological developments." http://facilities.unc.edu/about/plans/carolina-north/
Charlotte Research Institute	2000	"Charlotte Research Institute's goal is to enhance the technology infrastructure of the Charlotte region by facilitating the development of intellectual capital through global collaboration with industry, academia and government to create a top-tier interdisciplinary technology research community." http://cri.uncc.edu/about-cri
Western Carolina University Millennial Initiative	Early 2000s	"[T]he Millennial Campus allows WCU to enter into public/private partnerships to enhance regional economic development beyond the university's traditional educational mission. The vision behind the Millennial Campus is to provide a space for university faculty and students, private firms, nonprofits, and government agencies to work together in applied research and practice that benefits the western North Carolina region." http://www.wcu.edu/engage/regional-development/millennial-initiative/
Appalachian Millennial Campus	2002	"The millennial campus is designed to strengthen the link between Appalachian's educational and research programs and regional economic development initiatives." http://www.news.appstate.edu/2002/08/09/campus-5/
NC Research Campus	2005	"The North Carolina Research Campus [houses] [c]orporations, universities and healthcare organizations [that] have forged a public-private partnership that is

Park	Year founded	Description
		transforming science at the intersection of human health, nutrition and agriculture by: • Advancing the boundaries of research and development • Addressing human disease through new approaches to prevention and treatment • Educating the next generation of scientists and medical professionals • Driving the local economy." https://transforming-science.com/transforming-science/
Gateway University Research Park	2006	"Gateway University Research Park provides world-class laboratories and office space to businesses, universities and the local community. In this uniquely collaborative environment, our tenants and partners utilize shared resources for technological growth, discovery and progress. Gateway's premier campus also provides the support needed to help turn cutting-edge intellectual property into thriving businesses in areas of life and physical science, engineering and other applied sciences." http://www.gatewayurp.com/
CREST Research Park	2007	"[University of North Carolina at Wilmington] CREST Research Park drives translational research initiatives that support economic growth and innovative product developments that benefit the world." http://uncw.edu/CREST/
East Carolina University Millennial Campus	In planning	"[The ECU Millennial Campus will be a location] where the university can collaborate with private companies to commercialize research discoveries and offer advanced training to benefit the region's high-tech industries." http://www.ecu.edu/cs-admin/news/bogatecu.cfm

References

"Articles of Amendment for Greensboro Center of Innovative Development, Inc., Which Changed Its Name to Gateway University Research Park, Inc." (Name Change) (2006). Raleigh, North Carolina.

"Management Services and Development Agreement" MSDA (2005). Greensboro, North Carolina.

"Memorandum of Agreement for the Use of the Central North Carolina School for the Deaf (CNCSD) and a Portion of the North Carolina A&T State University Farm as a Joint Millennial Campus" MOA (2003). Greensboro, North Carolina.

"Memorandum of Understanding" [between Sharon Hightower et al. of the College Forest Neighborhood Association and the residents of the College Forest subdivision, and Gateway University Research Park, Inc. (MOU) (2007).

"Talking Points: Knowledge Based Economic Development (KBED) – NCATSU/UNCG (1999)" (Talking Points) (1999). Greensboro, North Carolina.

"The First Decade of Gateway University Research Park: An Historical Narrative" (First Decade) (2003). Greensboro, North Carolina.

Articles of Incorporation of Greensboro Center for Innovative Development, Inc. (Articles) (2003). Raleigh, North Carolina.

Association of University Research Parks (AURP) (2016). What Is a Research Park? http://www.aurp.net/what-is-a-research-park.

Boyette, J. A. (2002). *Ideas for collaboration between UNC-G and DHHS*. Greensboro, North Carolina.

Boyette, J. A. (2003). *Greensboro Center for Innovative Development: A Joint Millennial Campus of North Carolina A&T State University (A&T) and The University of North Carolina at Greensboro (UNCG)*. Greensboro, North Carolina.

Brown Jurkowski Architectural Collaborative (BJAC) (2006). *Greensboro Center for Innovative Development (GCID) South Campus Master Plan*. Raleigh, North Carolina.

Gateway University Research Park, Inc. (GURP) (2007a). *2007 Annual report*, Greensboro, North Carolina.

Gateway University Research Park, Inc. (GURP) (2007b). *Ground lease agreement between the State of North Carolina (lessor) and Gateway University Research Park, Inc. (lessee) for Joint Millennial Campus Greensboro*, North Carolina.

Gateway University Research Park, Inc. (GURP) (2009). *2009 Annual report*. Greensboro, North Carolina.

Gateway University Research Park, Inc. (GURP) (2010). *2010 Annual report*. Greensboro, North Carolina.

Gateway University Research Park, Inc. (GURP) (2012). *2012 Annual report*. Greensboro, North Carolina.

George, Henry, George Partners (GHGP) (2006). *GCID South Campus research and technology park: full report*. McLean, Virginia.

Greensboro Center for Innovative Development (GCID) (2005a). *Board meeting minutes*. Browns Summit, North Carolina.

Greensboro Center for Innovative Development (GCID) (2005b). *Orientation meeting*. Browns Summit, North Carolina.

Greensboro Center for Innovative Development (GCID) (2006). *Board meeting minutes*. Browns Summit, North Carolina.

Hobbs, K. G., Link, A. N., & Scott, J. T. (2017). The growth of U.S. science and technology parks: does proximity to a university matter? *Annals of Regional Science*. https://doi.org/10.1007/s00168-017-0842-5.

Internal Revenue Service (IRS) (2004). Greensboro Center for Innovative Development Inc. Greensboro, North Carolina.

International Association of Science Parks (IASP) (2016). Science Park: IASP official definition. http://www.iasp.ws/knowledge-bites.

Link, A. N. (1995). *A generosity of spirit: the early history of research Triangle Park*. Research Triangle Park: Research Triangle Foundation of North Carolina.

Link, A. N. (2002). *From seed to harvest: the early growth of research Triangle Park*. Research Triangle Park: Research Triangle Foundation of North Carolina.

Link, A. N., & Scott, J. T. (2006). U.S. university research parks. *Journal of Productivity Analysis, 25*, 43–55.

Link, A. N., & Scott, J. T. (2007). The economics of university research parks. *Oxford Review of Economic Policy, 23*, 661–674.

Link, A. N., & Scott, J. T. (2015). Research, science, and technology parks: vehicles for technology transfer. In A. N. Link, D. S. Siegel, & M. Wright (Eds.), *The Chicago handbook of university technology transfer and academic entrepreneurship* (pp. 168–187). Chicago and London: University of Chicago Press.

Link, A. N., & Yang, U. Y. (2017). On the growth of Korean technoparks. *International Entrepreneurship and Management Journal*. https://doi.org/10.1007/s11365-017-0459-2.

National Research Council (NRC). (2009). *Understanding research, science and technology parks: global best practices*. Washington: National Academy Press.

North Carolina Board of Science & Technology NCBS&T (2004). *University-industry-government collaboration: UNC millennial campuses*. Raleigh, North Carolina.

Renick, James C., and Patricia A. Sullivan (2003a). *Collaboration efforts between North Carolina A&T State University (A&T) and The University of North Carolina at Greensboro (UNCG)*. Greensboro, North Carolina.

Renick, James C., and Patricia A. Sullivan (2003b). *Letter to Gwynn Swinson*, Greensboro, North Carolina.

Sullivan, Patricia A. (Sullivan Letter) (2000). *Letter to Richard L. Moore*. Greensboro, North Carolina

United Kingdom Science Park Association (UKSPA) (2016). *The science and innovation sector*. http://www.ukspa.org.uk/our-sector.

United Nations Organization for Education, Science and Culture (UNESCO) (2016a). *Science parks around the world*. http://www.unesco.org/new/en/natural-sciences/science-technology/university-industry-partnerships/science-parks-around-the-world/.

United Nations Organization for Education, Science and Culture (UNESCO) (2016b). *Science and technology park governance*. http://www.unesco.org/new/en/natural-sciences/science-technology/university-industry-partnerships/science-and-technology-park-governance/concept-and-definition/.

Withers, L. (2004). *A&T, UNCG Hire CEO for Project*. N&R Greensboro.com, http://www.greensboro.com/news/a-t-uncg-hire-ceo-for-project/article_b131a0a0-c8b4-5dc8-b777-ff245ff51680.html.